

Dynamic Textures

R. Hertel

The fast magnetization dynamics in nano- and microscale ferromagnets is strongly influenced by fundamental structures, like domain walls and vortices. Several concepts of future nanomagnetic devices rely on the controlled displacement of such magnetic textures, which could be used to store binary information or to perform logic operations. Accordingly, their dynamic properties have been the subject of intense research over the past years. Experimental studies and numerical simulations based on micromagnetic theory have provided important insight. This lecture will report on fundamental aspects and recent developments concerning the dynamics of vortices, domain walls, and Bloch points in magnetic nanostructures.